299-W11-18 (A7284)
Log Data Report

Borehole Information:

Borehole:		299-W11-18 (A7284)		Site:	216-T-35 Crib
Coordinates (WA St Plane)		GWL[1] (ft):	269.15	GWL Date:	11/13/07
North (m)	East (m)	Drill Date	TOC Elevation	Total Depth (ft)	Type
137161.379	567181.899	Not available	712.31 ft	300	Cable

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Welded steel	2.8	8 5/8	8 1/16	9/32	2.8	300

Borehole Notes:

The logging engineer measured the casing diameter with a caliper and steel tape.

Logging Equipment Information:

Logging System:	Gamma 4L		Type: Serial No.:	SGLS HPGe (60%) 47TP32211A
Effective Calibration Date:	07/09/07	Calibration Reference:	HGLP-CC-020	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Logging System:	Gamma 4H		Type: Serial No.:	NMLS H310700352
Effective Calibration Date:	11/06/06	Calibration Reference:	HGLP-CC-021	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2	3 Repeat	4 Repeat	
Date	11/13/07	11/14/07	11/14/07	11/20/07	
Logging Engineer	Spatz	Spatz	Spatz	Spatz	
Start Depth (ft)	150.0	297.0	50.0	38.0	
Finish Depth (ft)	3.0	149.0	37.0	20.0	
Count Time (sec)	100	100	100	100	
Live/Real	R	R	R	R	
Shield (Y/N)	N	N	N	N	
MSA Interval (ft)	1.0	1.0	1.0	1.0	
Pre-Verification	DL051CAB	DL061CAB	DL061CAB	DL071CAB	
Start File	DL051000	DL061000	DL061149	DL071000	
Finish File	DL051147	DL061148	DL061162	DL071018	
Post-Verification	DL051CAA	DL061CAA	DL061CAA	DL071CAA	
Depth Return Error (in.)	- 0.5	N/A	- 0.5	0	
Comments	No fine gain adjustment	No fine gain adjustment	No fine gain adjustment	No fine gain adjustment	

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	5	6	7 Repeat		
Date	11/20/07	11/21/07	11/21/07		

Log Run	5	6	7 Repeat		
Logging Engineer	Spatz	Spatz	Spatz		
Start Depth (ft)	268.75	95.0	50.0		
Finish Depth (ft)	94.0	3.0	20.0		
Count Time (sec)	15	15	15		
Live/Real	R	R	R		
Shield (Y/N)	N	N	N		
MSA Interval (ft)	0.25	0.25	0.25		
Pre-Verification	DH842CAB	DH852CAB	DH852CAB		
Start File	DH842000	DH852000	DH852369		
Finish File	DH842704	DH852368	DH852489		
Post-Verification	DH842CAA	DH852CAA	DH852CAA		
Depth Return Error (in.)	- 1.0	0	0		
Comments	None	None	None		

Logging Operation Notes:

Logging was conducted with a centralizer on each sonde. All measurements are referenced to top of casing.

Analysis Notes:

Analyst:	Henwood	Date:	02/26/08	Reference:	GJO-HGLP 1.6.3, Rev. 0

Pre- and post-run verifications for the logging systems were performed before and after each day's data acquisition. The acceptance criteria were met.

A casing correction for a 9/32-in.-thick casing was applied to the SGLS data. Below 269 ft, a correction was applied for water inside the borehole casing. The moisture data were converted to volume percent moisture according to calibrations for an 8-in. ID casing.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with EXCEL worksheet template identified as G4LJuly07.xls using efficiency functions and corrections for casing, dead time, and water as determined from annual calibrations.

Results and Interpretations:

Cs-137 was detected from 22 to 45 ft. The maximum Cs-137 concentration was measured at approximately 1400 pCi/g at 25 ft. Other sporadic detections of Cs-137 near its MDL were less than 1 pCi/g.

Co-60 was detected between 24 and 47 ft. The maximum concentration was 2.3 pCi/g at 25 ft.

Eu-154 was detected from 24 to 52 ft. The maximum concentration was measured at approximately 5.5 pCi/g at 25 ft.

Moisture data indicate significant variability.

Repeat sections acquired for the logging system indicate good repeatability.

The Westinghouse Hanford Company logged this borehole in 1995 with the Radionuclide Logging System (RLS). After correcting for decay to 2007, the log data compare favorably with the current SGLS log data. No significant changes in radionuclide concentrations or profile are indicated.

List of Log Plots:

Depth Reference is top of casing

Manmade Radionuclides (2 pages)

Natural Gamma Logs (2 pages)
Combination Plot (3 pages)
Combination Plot (0 to 300 ft)
Total Gamma & Moisture (0 to 300 ft)
Repeat of Manmade Radionuclides
Repeat Section of Natural Gamma Logs
Repeat Section for Total Gamma & Moisture
SGLS/RLS Comparison of Manmade Radionuclides

[1] GWL – groundwater level

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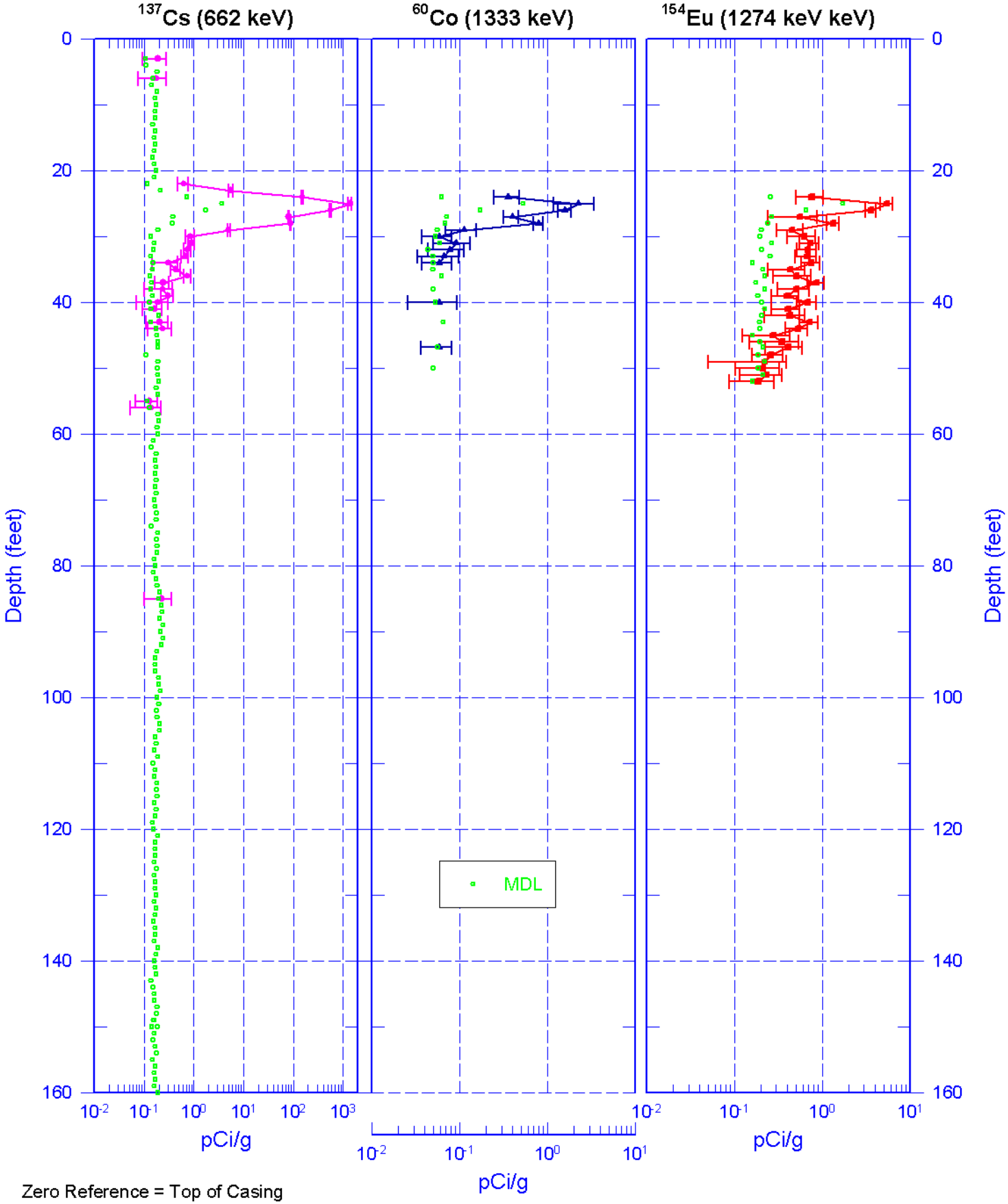
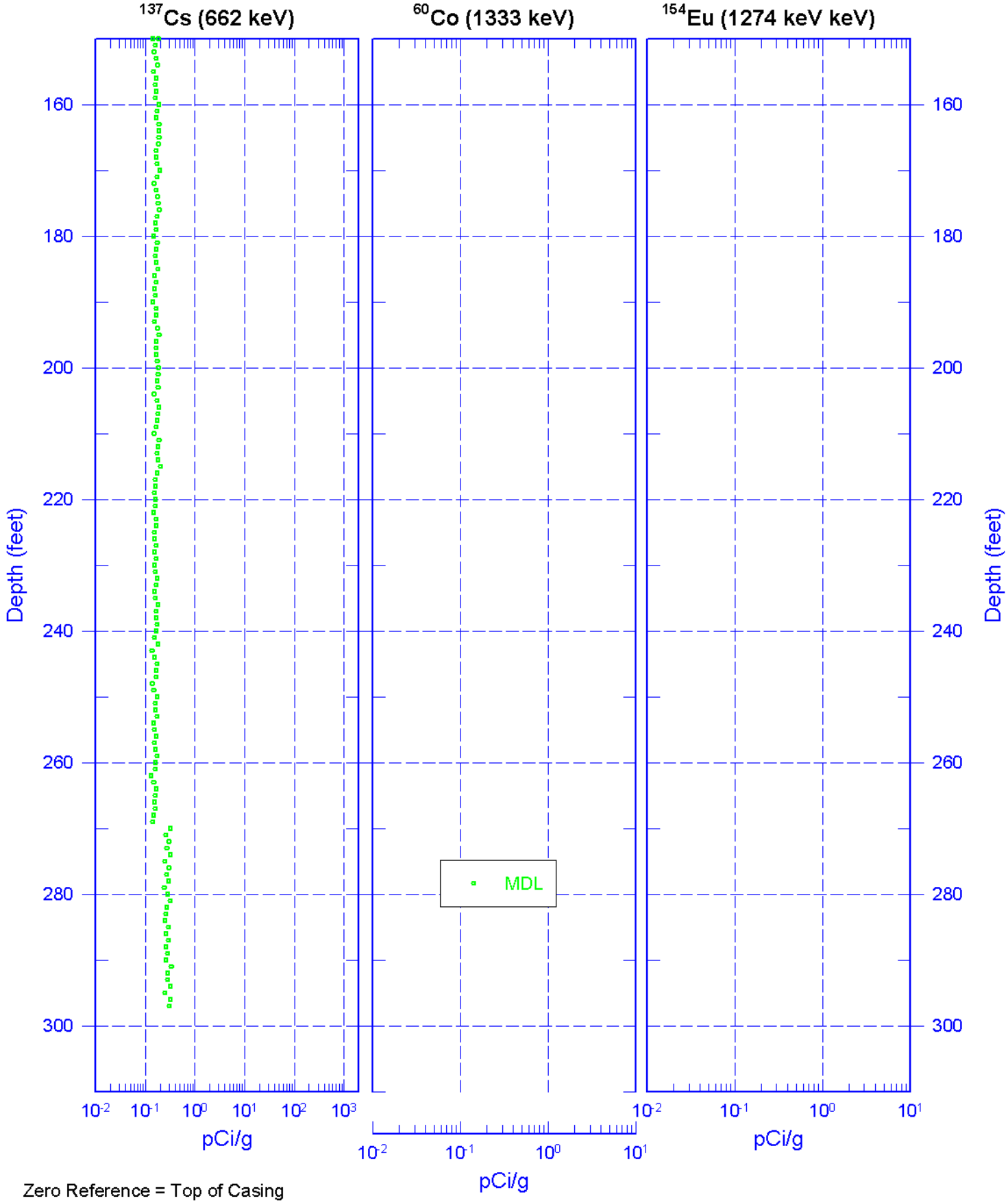
299-W11-18 (A7284)
Man-Made Radionuclides



Zero Reference = Top of Casing

299-W11-18 (A7284)
Man-Made Radionuclides



Zero Reference = Top of Casing

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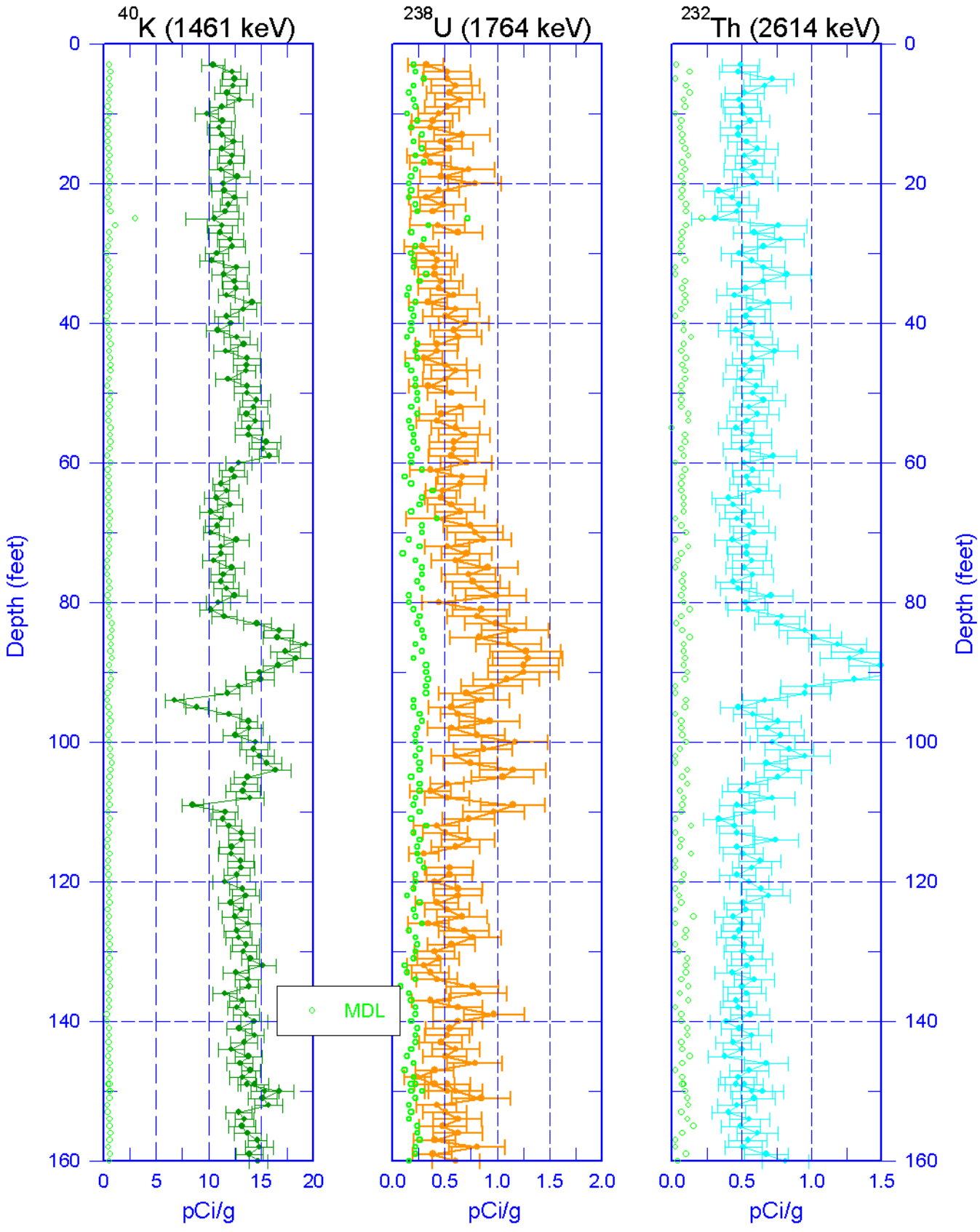
299-W11-18 (A7284)
Natural Gamma Logs



Zero Reference = Top of Casing

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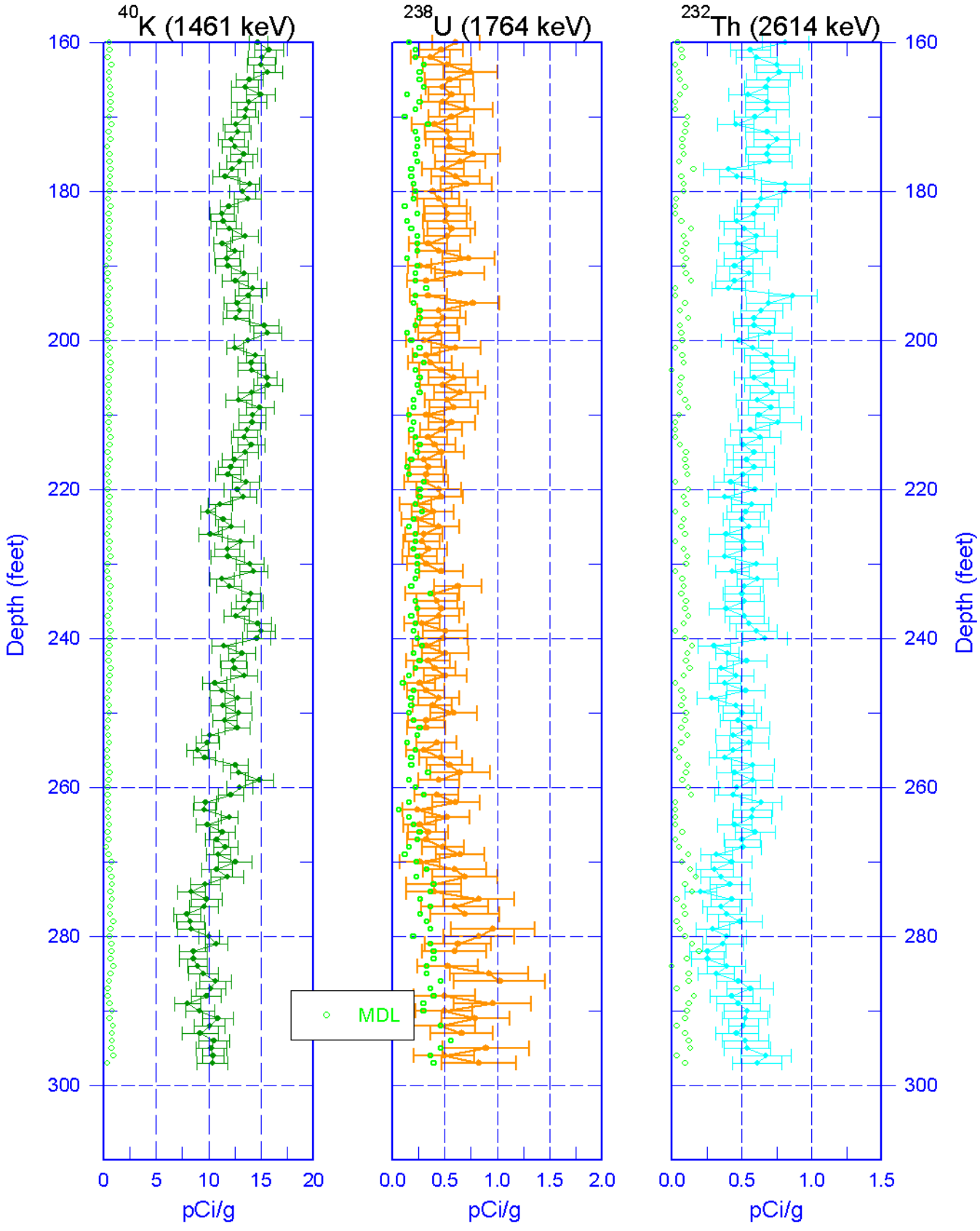
299-W11-18 (A7284)
Natural Gamma Logs



Zero Reference = Top of Casing

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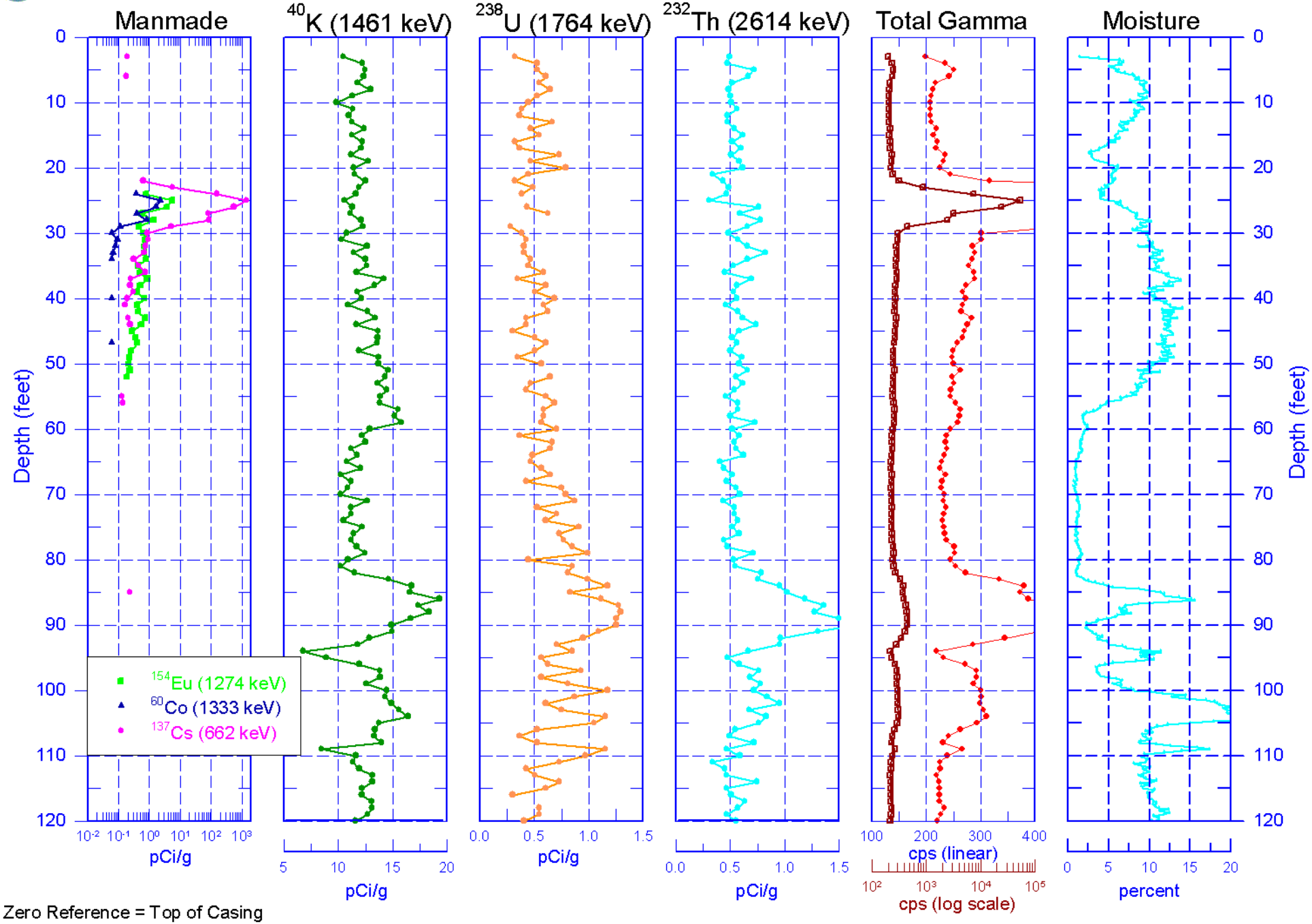
299-W11-18 (A7284) Combination Plot



Zero Reference = Top of Casing

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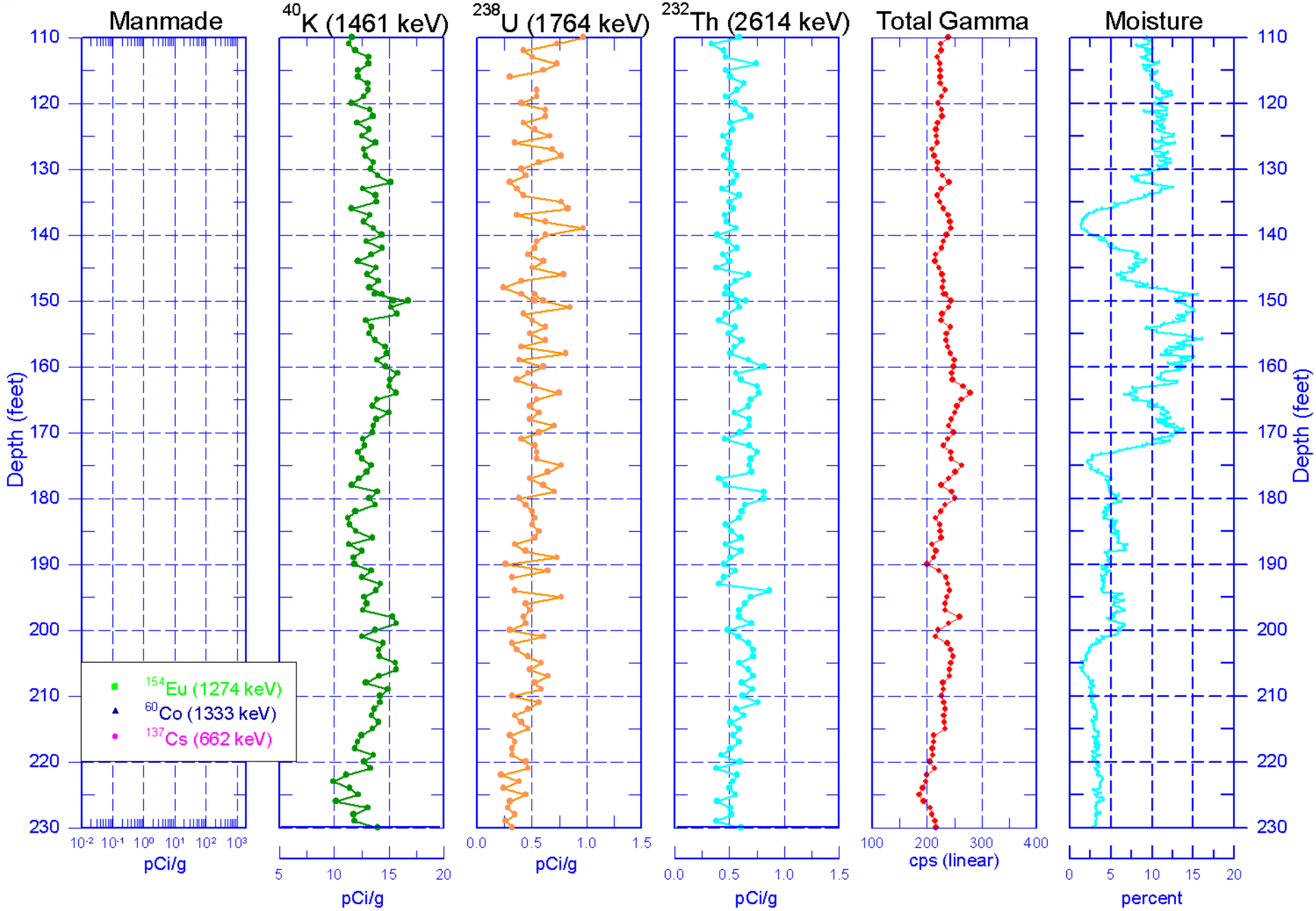
299-W11-18 (A7284) Combination Plot



Zero Reference = Top of Casing

299-W11-18 (A7284) Combination Plot

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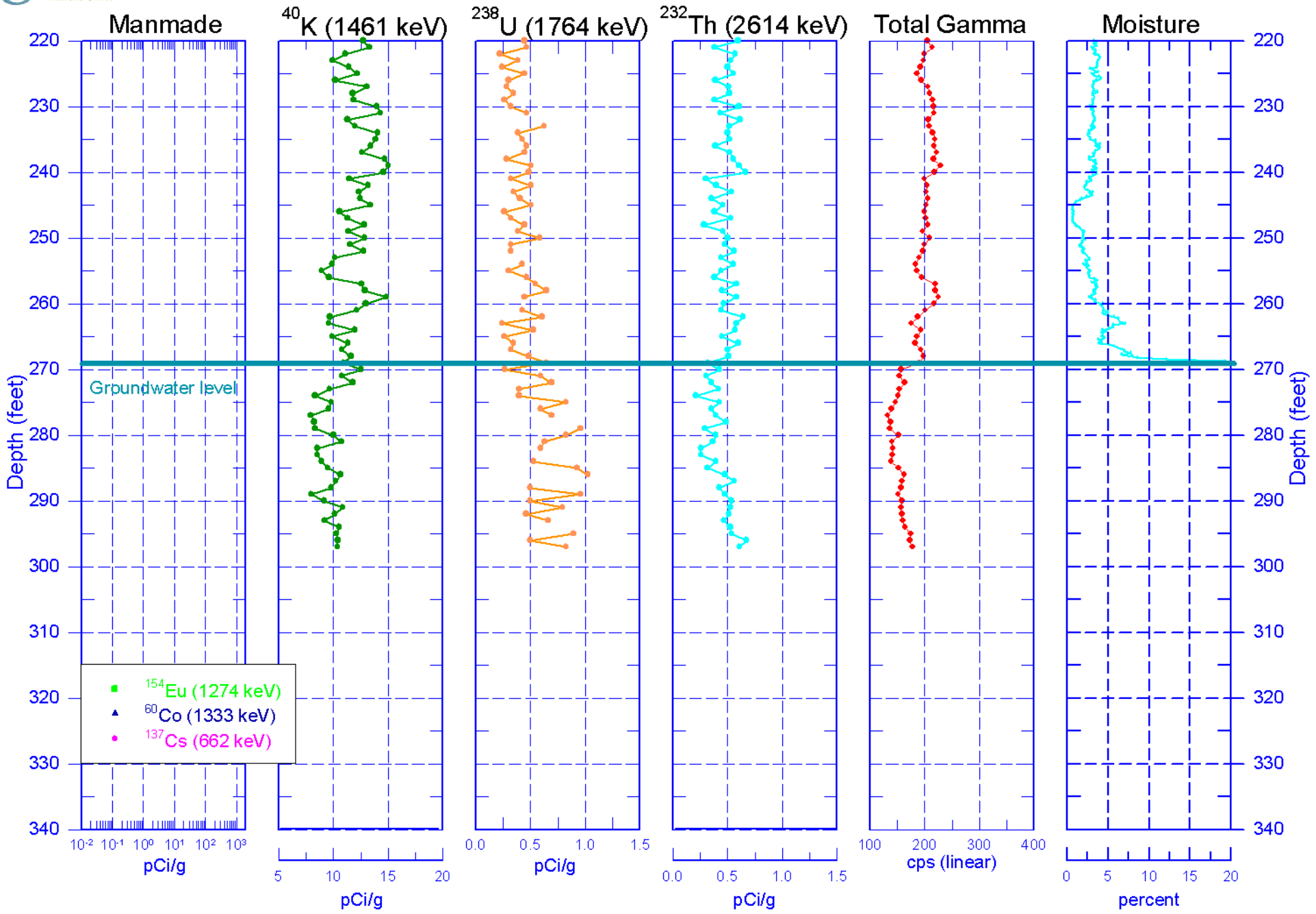

Zero Reference = Top of Casing

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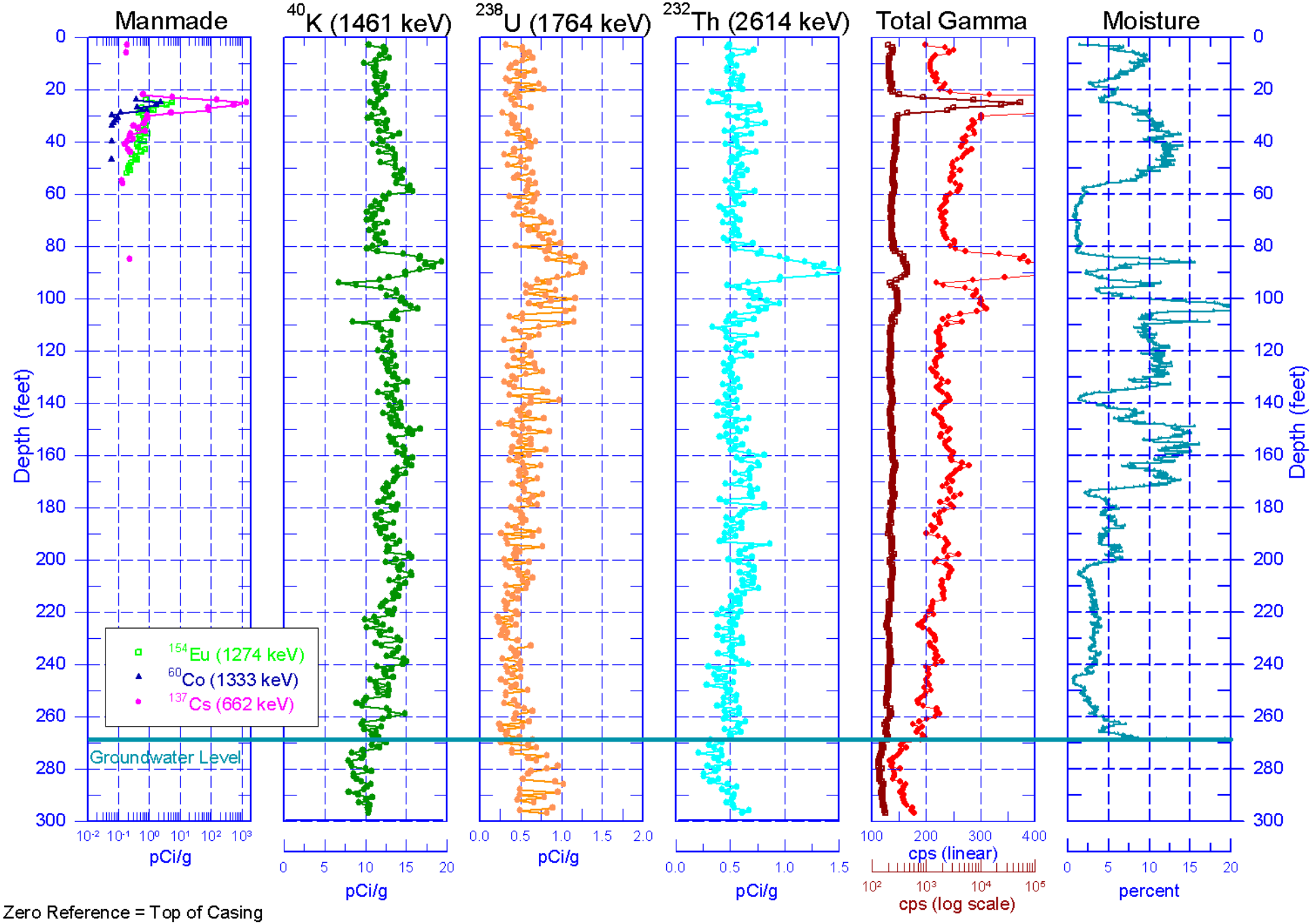
299-W11-18 (A7284) Combination Plot



Zero Reference = Top of Casing

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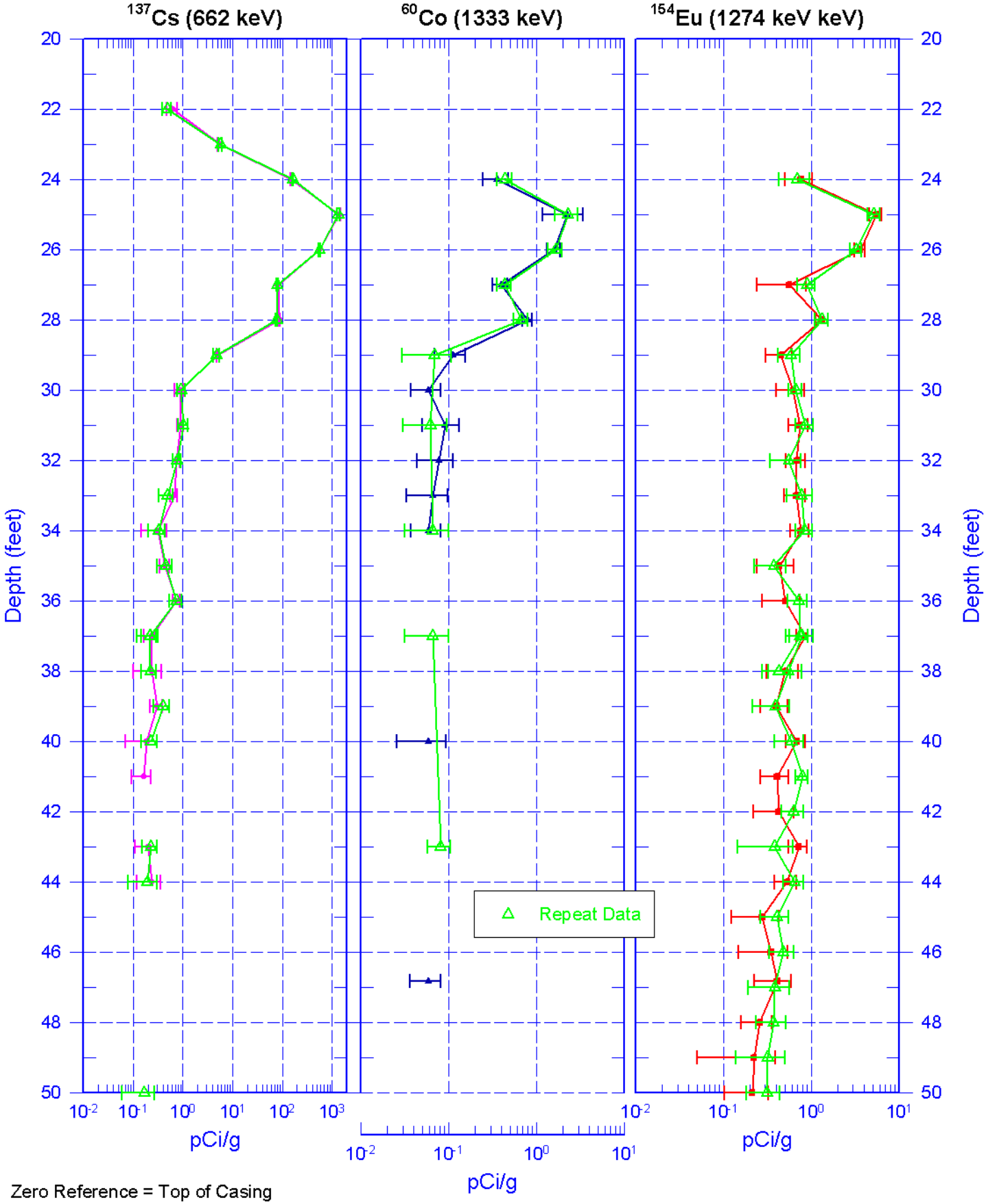
299-W11-18 (A7284)
Repeat of Manmade Radionuclides



Zero Reference = Top of Casing

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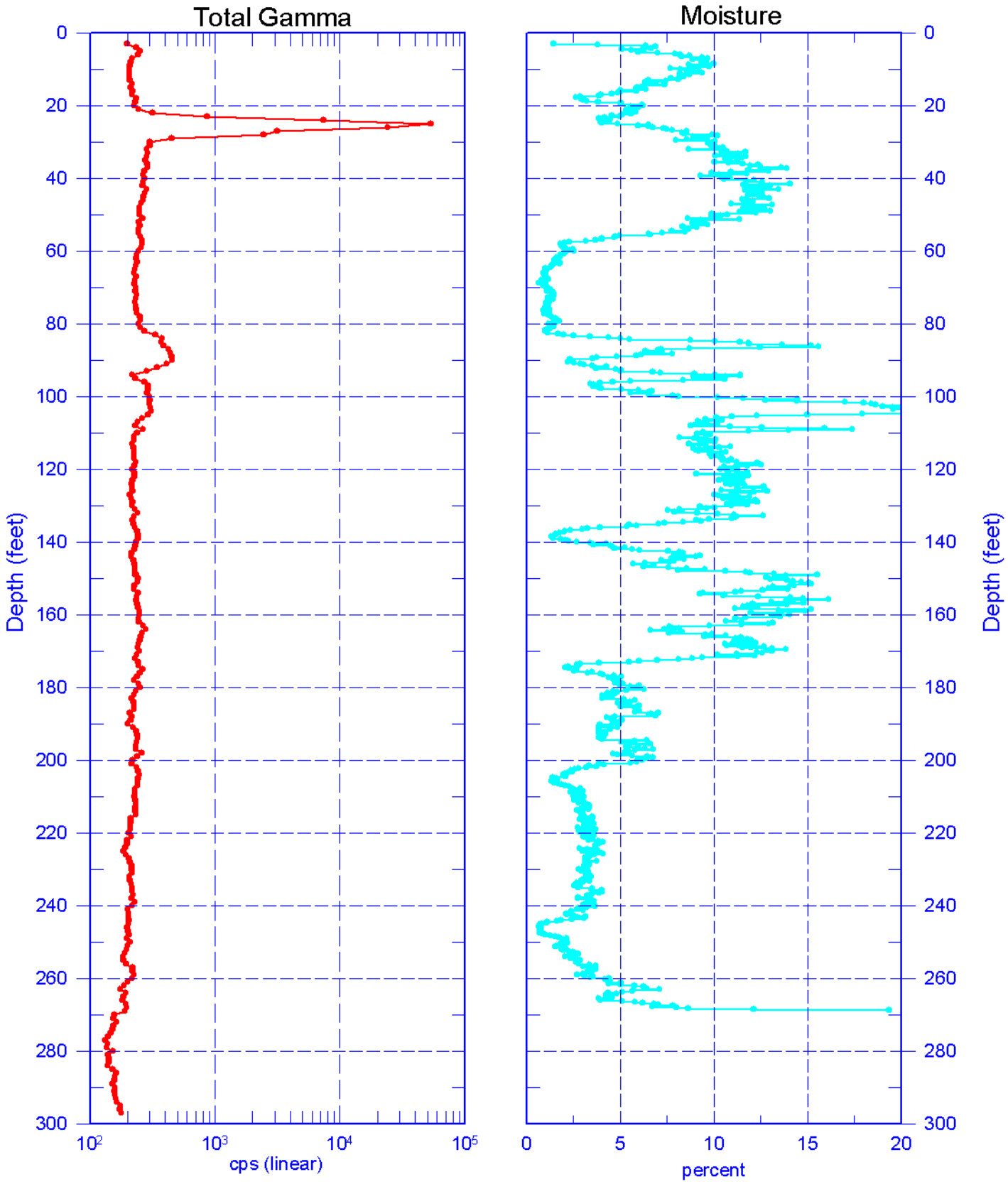
299-W11-18 (A7284)
Total Gamma & Moisture



Reference - Top of Casing

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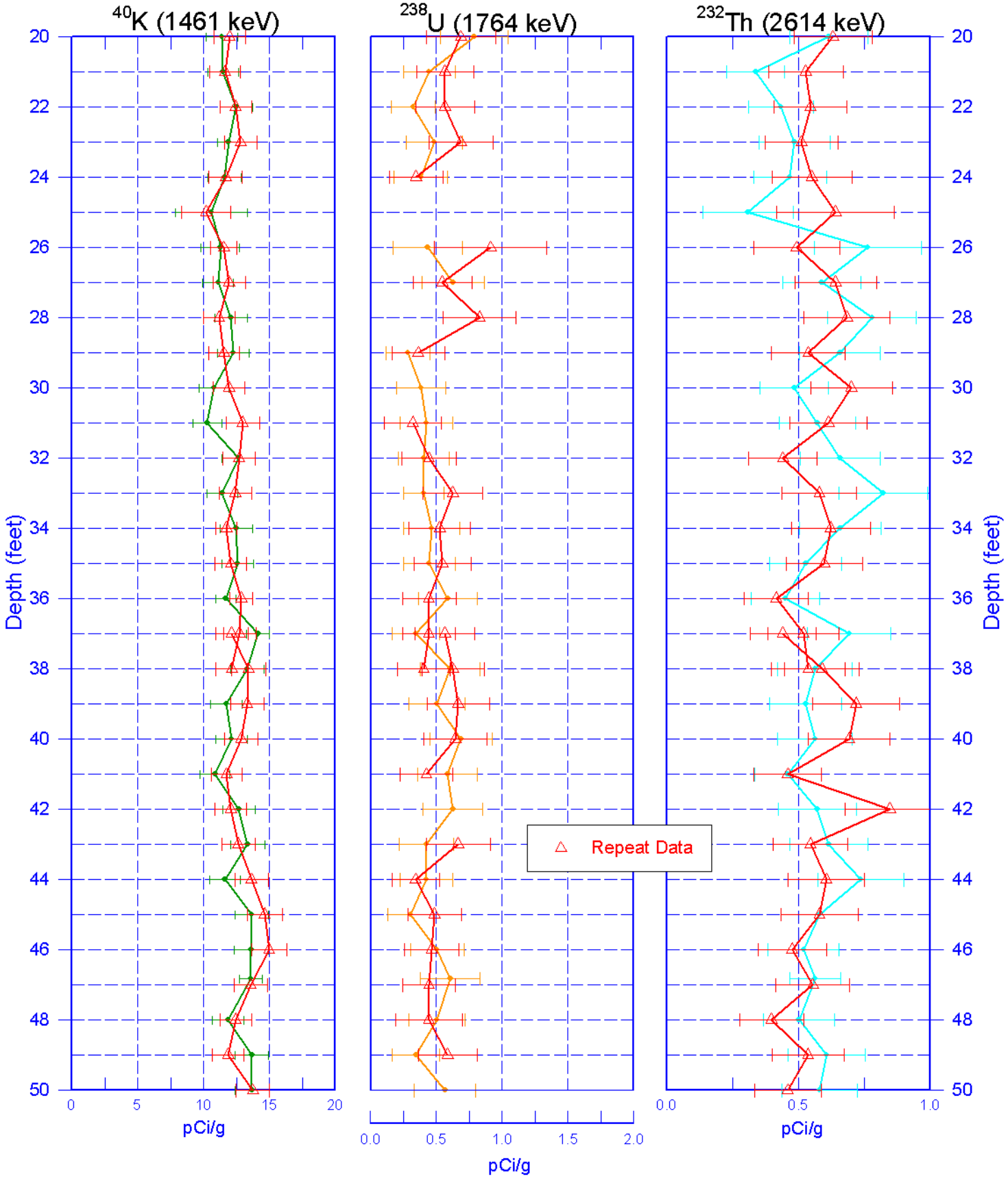
299-W11-18 (A7284)

Repeat Section of Natural Gamma Logs



Zero Reference = Top of Casing

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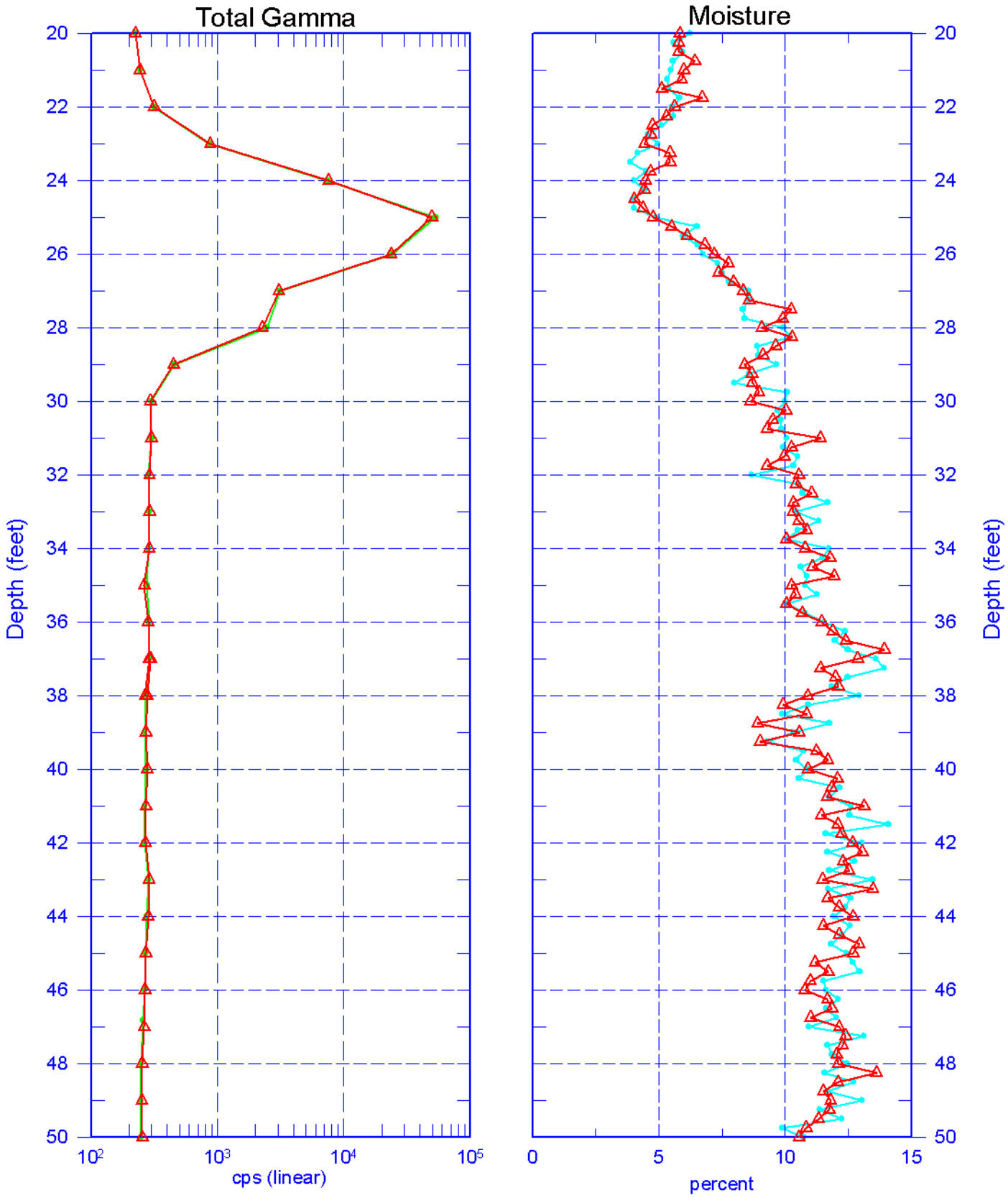
299-W11-18 (A7284)

Repeat Section for Total Gamma & Moisture



Reference - Top of Casing

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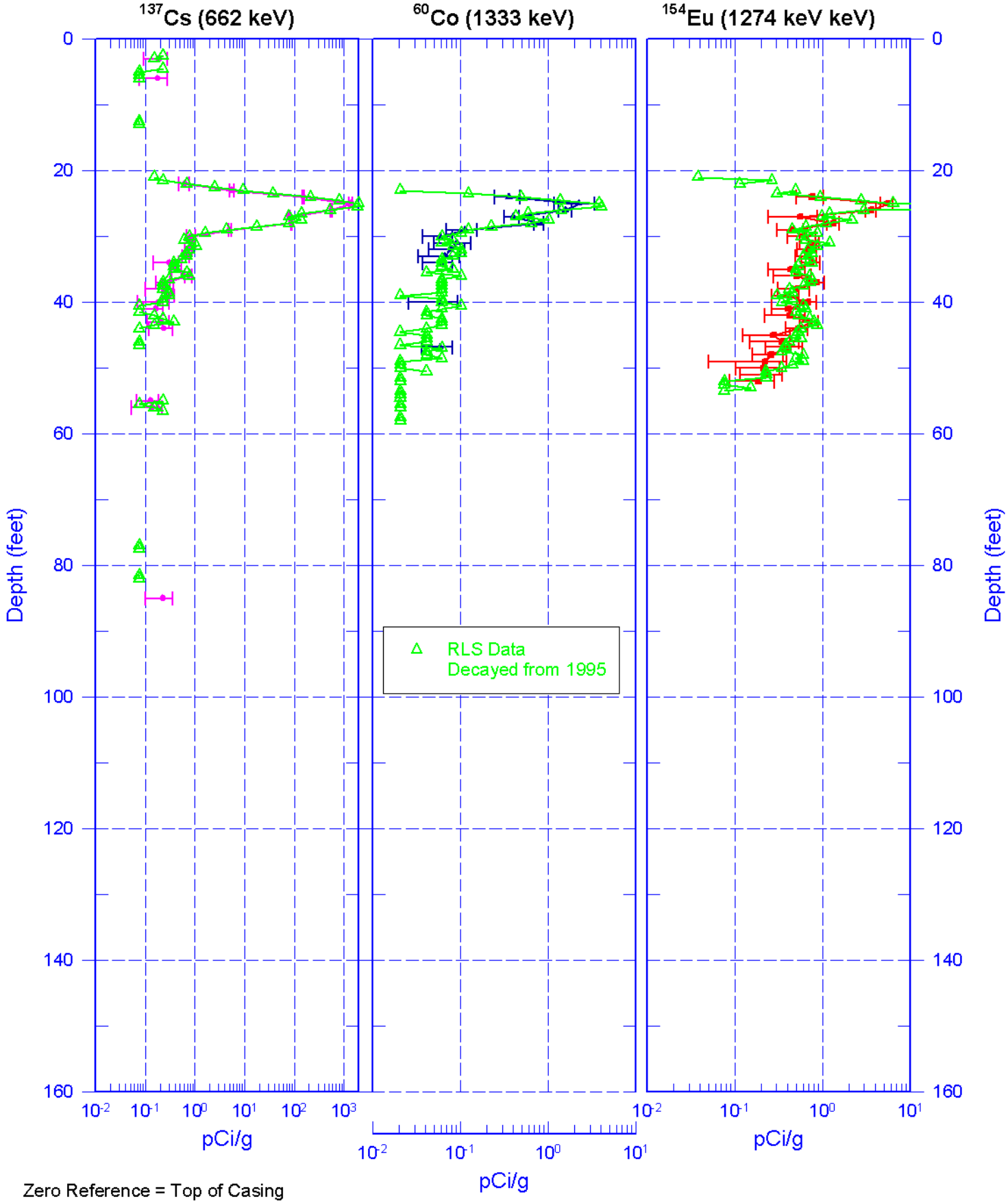
SGLS/RLS Comparison of Man-Made Radionuclides



Zero Reference = Top of Casing